

CONTRACT FARMING AND OUT GROWER SCHEMES IN LESS DEVELOPED COUNTRIES: DEFINITIONS, TYPOLOGIES AND ECONOMIC THEORIES

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Abstract

Very little attempt has so far been made to consider the basic economic theories relevant to contract farming and out grower schemes that could provide an insight into the controversies surrounding such programmes. This paper aims at reviewing a few neo classical micro economic theories relevant to contract farming while the views of various schools of thought are also being briefly discussed. These theories might be helpful in analysing the impact of these schemes on farmers, contracting firms and host governments.

Key Words

Contract Farming, Outgrower Schemes impact Definitions and typologies, Micro Economic theory, theory of the contracting firms, theory of the contract farming, development theory and contract farming.

1.0 Introduction

The introduction of contract farming (CF) and outgrower schemes (OGS), first by the transnational agribusiness firms, and later by parastatal organisations and local companies, has led to the promotion of cash cropping and thereby, commercialisation of agriculture in many Less Developed Countries (LDCs), particularly those in Africa and Latin America (Von Braun et. Al:1989; Kennedy:1989). Such schemes have encouraged local processing and export of non-traditional crops from these countries (Maxwell: 1988). This is in sharp contrast with the earlier trade pattern in which primary commodity exports from LDCs were processed in factories located within developed countries (Matthews: 1988). These CF and OG schemes, by and large, introduced new crops, new farming techniques, and resulted in increased farm incomes of the small scale growers who participated in them (Glover:1983; Goldsmith:1985; Minot:1986). But the schemes are also being criticised for their negative effects on food security, nutrition, income distribution, environment, and welfare of labourers and women (Lappe and Collins:1977; Franke and Chasin:1981; George:1980; Fedder:1977; Dinham and Hines:1983; Watts:1990; Frank:1981). However, there are few cases reported in the literature where researchers have found that CF and OG schemes have

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achieved growth without sacrificing equity objectives in Fiji, Kenya, and Malaysia (Elis:1988; Lamb and Muller:1982; Allen:1983; Barlow and Jayasoorya:1986).

Although the literature on these schemes is growing, very little attempt has so far been made to consider the basic economic theories relevant to contract farming that could provide an insight into the controversies surrounding such programmes. This paper aims at reviewing a few economic theories that can be of use in assessing the economic impact of CF and OG schemes on participating farm households, contracting companies and grower associations.

This paper is organised as follows. The ensuing section deals with the definitions and concepts on contract farming while section 3 discusses the typologies of the same. Section 4 reviews some neo-classical micro economic theories relevant to contract farming while the views of various schools of thought are also briefly discussed there. The controversial issues emanating from the available literature are presented in section 5. Section 6 summarises the conclusions.

2.0 Definitions and Concepts

There are several definitions on contract farming which appear in the literature. The earliest definition is that of Roy (1972), although contract farming dates back to 1940's in the United States. Roy defined contract farming as "those contractual arrangements, between farmers and the firms, whether oral or written, specifying one or more conditions of production and/or marketing of an agricultural product" (p.3). Glover (1984) commenting that Roy's definition was too broad because it included forward contracts where actual delivery is not essential, modified Roy's definition by adding to it, "contracting arrangements in which the firm and it's suppliers are known to each other, and in which firm's behaviour has some influence over the growers farming practices. These contracts are non-transferable."(p.1145) Glover also suggested that the "and/or" given in Roy's definition be changed to "and", i.e., that one or more conditions of production and marketing be specified. While it is useful to exclude futures markets which are entirely different institutional mechanisms from contract farming, it is not clear why it is necessary that the firm and the suppliers should be known to each other in a contract farming situation. In fact variations of contract farming are found in some countries, notably in Kenya, Thailand and Sri Lanka, where the firms provide block contracts to quotamen, agents or middlemen, who in turn come into contractual arrangements with small scale farmers. (Ayako et al:1989; Menegay: 1985; Manarungsan and Suwanjender: 1992; Abeysekara: 1985; Kirk: 1987a; Kirk: 1988).

Another definition on contract farming is provided by Minot(1986). According to him contract farming may be defined as "agricultural production carried out according to an agreement between farmers and a buyer which places conditions on the production and marketing of the commodity" (p.2) This is the simplest definition appearing in the literature. However, this definition does not specify whether the agreements can be

written or oral (formal or informal). It also does not say anything about provision of inputs and /or services to farmers by the firm as part of the contract. In their definition Watts and Little (undated) consider the input and/or service provision to farmers. They define contract farming to include the following situations.

" a) a future or forward market in which a buyer or processor commits in advance to purchase a crop acreage or volume, b) the linkage of product and factor markets insofar as purchase rests on specific grower practices or production routines and input and/ or service provision by buyer/processors; and c) the differential allocation of production and marketing risks embodied in the contract itself"

(quoted in Jackson and Cheater: 1989, p.97)

A major weakness of this definition is that it specifically includes future markets under contract farming. Moreover, this definition implicitly assumes that the contracts should be in the written form as implied in c) above. On the other hand, Neocosmos and Testerink (1985) describe contract farming as

" schemes which constitute a relationship between (sections of) the local peasantry and transnational agribusiness enterprises, often in combination with the local government. This relationship involves the transnational controlling the more profitable sector and marketing the final product while restricting the smallholders to production process which it indirectly controls. It also provides managerial and technical services and means of production to the contracted peasantry on an easier basis than that available on a free market,"

(quoted in Sithole and Boeren:1989, p.59)

This definition is also too narrowly focused on two issues. One is that it restricts contract farming to transnational agribusiness enterprises only. This is false. At least several parastatals and a large number of local private companies are involved in contract farming in Less Developed countries (LDC). Most of the Outgrower Schemes supported by the Commonwealth Development Corporation (CDC) provide good examples. The other limitation is that it sets a limit to the relationship between firms and peasantry .This is not necessarily true. Many large-scale farmers are also involved in contract farming. The Definition by Ayako et al (1989) takes these factors into account when they describe contract farming as a

"production system where smallholders or large scale farmers (owner cultivators) enter, into a formal or informal production and sale agreement (contract) with agro-industrial corporations. The contract often specifies that technological know-how and various outgrowers' agricultural support services will be provided to the farmers including the credits, input, machinery rentals, extension services and general infrastructure. The contract also, includes provisions regarding terms of sale

of output, distribution of production and marketing risks, maintaining price levels, and mechanisms for arbitrating breach or termination of contract by either party. Existing large scale smallholder contract farming schemes tend to be commodity specific."

(Ayako et. al: 1989, p.4).

Although this definition provides a more comprehensive picture of a contract-farming situation, it also has one or two limitations. Firstly it restricts contract farming to owner-cultivators. This is an unnecessary qualification, because contract farming also takes place under allottee systems, (e.g. FELDA Scheme in Malaysia) and also by those who do not possess titles to the land they cultivate (e.g., Communal land, and wives contracting their husband's land). The second limitation is that they describe the contracting firms as agro-industrial corporations. This is not true. The firms could include other buyers, for example, exporters. In perusing all these definitions, it is apparent that the definition provided by Roy, stands as the best so far available. Its only deficiency is that it includes futures markets. When modified, to accommodate this weakness, it is capable of capturing the many variations in contract farming systems existing in both developed and less developed countries.

3.0 Typologies of Contract Farming

Contract farming is variously known in the literature. Core-satellite farming, nucleus estates, and outgrower schemes are some of the terms used. Most writers use these terms interchangeably. Glover (1984) however, differentiates between contract farming and outgrower schemes. He explains that while contract farming is the term used to identify the schemes operated by private companies (both foreign and local), the term outgrower schemes may be used to classify schemes operated by the parastatal bodies. Voll (1980) on the other hand has described nucleus estates/outgrower structure in the following manner.

"In the nucleus estate a core of processing and research facilities and a limited estate is surrounded by local farmers, who are assisted in supplying the project with produce...The nucleus estate will be relatively small, large enough only to supply the processing plant with enough raw materials to operate at its minimum productive capacity and support the projects research facilities"

(Voll:1980, p.138).

The concept of the Core-Satellite farming is also more or less the same. According to Freeman and Karen (1982) "private sector companies, processors and/or marketers of food stuffs and industrial crops develop in areas of potential productivity an integrated operation. They reach agreement with small producers guaranteeing a market at a fair price, providing technology, credit, inputs (such as fertilisers, herbicides, and seeds) assistance (in soil preparation, harvesting and storage) and finally servicing and marketing the product to processing and market" (pp.189). They call this system

"satellite farming" around a "corporate core". Thus, various terms used in the studies of contract farming represent different forms of production organisations under which contract farming is practised. Williams and Karen (1985) classified the contract farming and outgrower schemes they studied into a number of categories.

- a) Nucleus estates: These are enterprises with a core processing plant; plus a farm or plantation operated by the plant to produce part of the raw material requirement; plus a system of obtaining additional raw materials by means of contracting exclusively with small scale farmers. This coincides with the definitions given by Voll and Freeman and Karen and mentioned in the previous paragraph.
- b) Modified Nucleus estates: These are essentially nucleus estates with the difference that contract farms are a mixture of both small scale and larger, more commercial operations.
- c) Nearby processing and contract farming:. This category includes enterprises that obtain 100 percent of their raw materials through a system of contract farming, using small scale operators primarily, but possibly including larger scale, commercial farms as well. Such enterprises do not have a farm or plantation operated by the processing plant.
- d) Distant processing and contract farming: This category is made up of enterprises that obtain 100 percent of their raw material supply through a system of contract farming that uses small scale farmers primarily but may include larger scale commercial farms as well. Farming takes place some distance away from the processing plant, distinguishing these enterprises from those described in (c).
- e) Contract farming and marketing companies: These enterprises have no investments in a processing plant. They market raw materials obtained through a system of contract farming, using the small-scale farmers primarily, but in some cases include large-scale commercial farms.

4.0 Theoretical Background

4.1 Micro -economic theory

Despite the large number of case studies on the subject there is very little contribution in the form of micro- economic theory on contract farming. Minot (1986) has, however, attempted to build up a micro-economic theory of contract farming by using the scattered treatments available in the literature. He identifies three kinds of co-ordination mechanisms between the producers and the buyers of agricultural commodities. They are spot market exchange, vertical integration and contract exchange. He explains that in the spot (open) markets co-ordination is achieved through price mechanism. Prices provide incentives to buyers and sellers to adjust in such a way to equalise the supply and demand. The spot markets are highly efficient when they are

perfectly competitive. When this is not the case spot markets are less effective in co-ordinating supply and demand. The problems of spot market include, imperfect market information, imperfect production information, and imperfect input and credit markets. They function well for commodities that have little quality variation, are less perishable, have short production cycles, do not require precise timing of supply and have stable and known markets. They are adequate for commodities for which credit, input supply and technical assistance are less critical because of minimal input requirements and well-known production techniques. However, in the real world, Minot surmises, most markets for agricultural products are imperfect. Minot argues that, because of lack of perfect information, farmers can be assumed as risk-averse profit maximisers, subject to the information, skills and resources available. Given the static efficiency gains from specialisation, diversified subsistence production in Less Developed Countries (LDCs) is explained by: -

- a) production and marketing risks associated with commercial production (partly resulting from information limitations),
- b) insufficient financial resources (liquidity),
- c) unavailability of quality inputs and
- d) high transportation costs.

Thus according to Minot the imperfections of agricultural product markets in LDCs inhibits the proper co-ordination between the activities of sellers and buyers. Therefore he identifies the problems of access to production resources and markets as the most serious constraints on small farm production.

The nature of the structure of the agricultural product markets in LDCs however, is a controversial issue in the literature of agricultural marketing. At present there are at least three different groups of empirical studies, which are mainly devoted to the diagnosis of the structures of agricultural markets in LDCs. The first group consists of economists such as Cook (1952) and Wharton (1962) who were the first to support the monopsony/monopoly hypothesis empirically. This school maintains that most of the marketing systems for agricultural products and inputs are likely to be "exploitative" and fit into the traditional monopsony/monopoly model. The second group suggests that most of these markets do in fact approximate to the pure competitive model and they strongly reject the thesis of the first group. Bauer (1954) Ruttan (1969) Lele (1971) Jones (1972) are the principal advocates of this model. Apart from these polar cases, there is a third group who suggest that most of the market structures in LDCs could be explained by a monopolistic competitive model. This group consists of economists such as Nicholls(1941) and Smith (1975). Since the available evidence is inconclusive, it is difficult to say whether the market structures of LDCs are imperfectly competitive as thought by Minot. Where they are found to be imperfectly competitive however, it may be argued that contract farming allows farmers greater access to credit, inputs and product markets than is the case with those lacking any form of contractual arrangement.

Vertical integration is the second type of vertical co-ordination mechanism, achieved by organising two or more successive functions within the same firm. In the extreme, a vertically integrated firm may be involved in all the functions (or stages) from production to distribution to the final consumer. In the vertically integrated firm co-ordination becomes an issue of resource allocation within the firm. There are several advantages of integrating farming with subsequent stages (grading, processing, packaging and exporting.). Supply can be more accurately scheduled, and inputs and management applied without the problem of repayment of loans. The integration in the form of on site packaging and processing may serve to reduce the transport and handling costs for bulky and/or fragile commodities. On the other hand a critical limitation of vertical integration in farming is the lack of scale complementarity. Crops which are more efficiently produced on a small scale, such as those requiring intensive use of labour, are not easily integrated with large scale processing or exporting firms. Thus vertical integration is most appropriate for crops that have important quality variations, have long production cycles, require precise supply timing, have complex markets and require substantial amounts of specialised inputs, yet at the same time do not require intensive use of labour or careful husbandry.

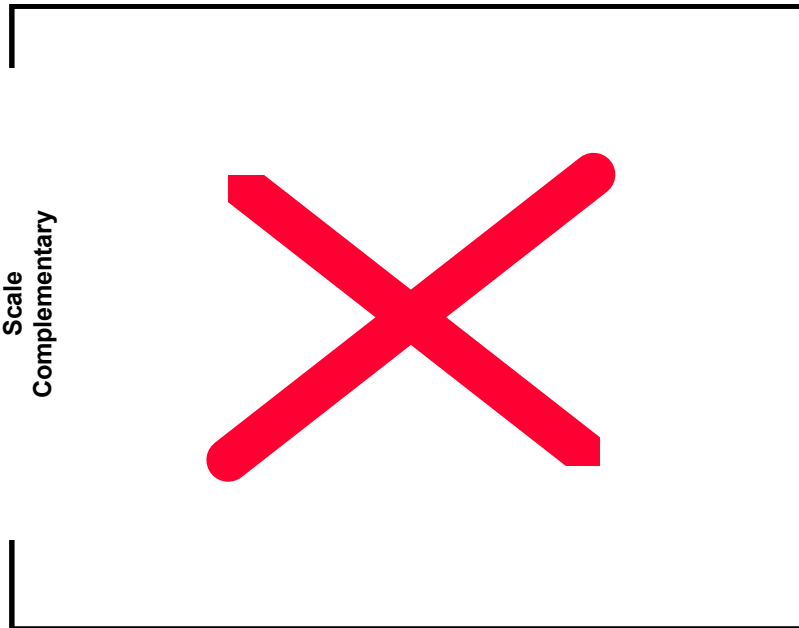
According to Minot, vertical integration is an institutional solution to the problems of market failure, which facilitates information flow regarding production practices, information flow regarding specific demand characteristics and the provision of financial and technical resources. Contracts take advantage of scale differences and information differences to provide growers with needed services, encouraging the use of certain inputs and practices, which are necessary to meet quality standards and delivery schedules.

Minot (ibid.) also identifies two variables, which seem important in explaining relative strengths of vertical integration and contract farming. They are scale complementarity (i.e., the similarity of the efficient scale of farming and processing/marketing) and the need for vertical co-ordination. He arrives at following conclusions:

- a) vertical integration performs better when very complex co-ordination is required; contracting is an intermediate co-ordination mechanism,
- b) a low degree of scale complementarity favours contracting over vertical integration even as co-ordination requirements become relatively great,
- c) a low degree of scale complementarity (when the efficient scale of farming is very small compared to that of processing/marketing) discourages contracting relative to spot market exchange since it raises cost of contracting a given volume of raw materials.

Thus contracting is most likely when co-ordination requirements are high but scale complementarity is low. It is an alternative to a) open market relationship and b) vertical integration, such as plantation processing plant complexes (see Figure 1).

Figure 1: Vertical integration as a function of scale complementarity and need for co-ordination



Goldsmith (1985) also used the degree of vertical integration in the production process and the extent to which the company is linked to farmers to develop a typology for corporate-small farmer system in which core-satellite farming (contract farming) is one type. He arranged these two characteristics in a simple matrix as shown in Table 1.

Table 1
Typology of corporate -small farmer systems

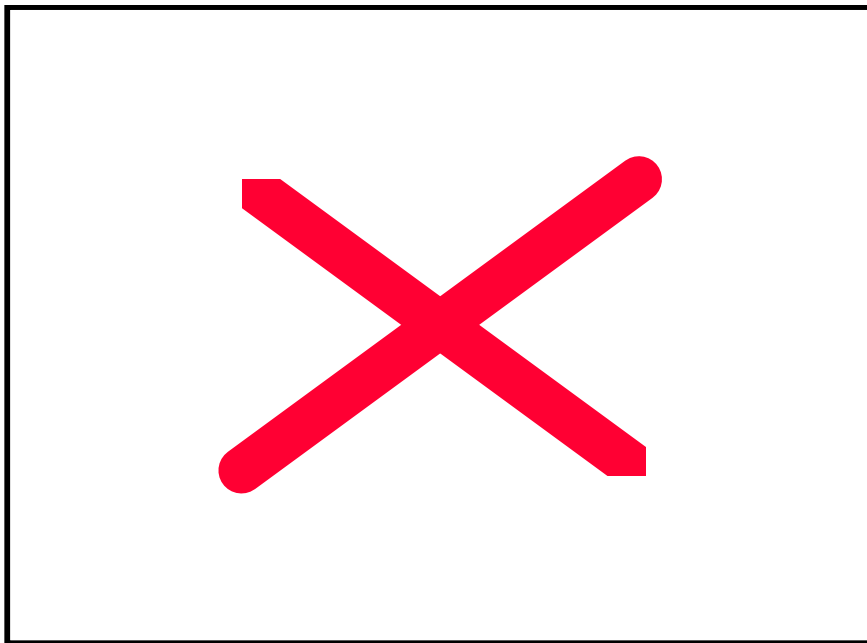
Production Process	Company-farmer linkages	
1. Less Integrated	Weaker <u>Traditional:</u> Small Traders purchase and distribute crops	Stronger <u>Bulk Purchasing:</u> Firm buys what it needs on open market
2. More Integrated	<u>Plantations:</u> Firm produces its own raw materials using hired labour	<u>Core-satellite:</u> Firm uses production contracts with small farmers

Accordingly he argued that the most promising type of interaction with small farmers (where the production process is more integrated and the company- farmer linkage is stronger) seemed to be in the lower left-hand cell where processors provide both an assured market outlet and critical production resources.

4.2 The Theory of the Contracting Firm

The market structure applicable to contract farming situations has been differently described by various writers. Glover (1990) has argued that contract farming generally involves some form of monopsony in which a single firm deals with a multitude of relatively unorganised farmers. Figure 2 is a graphical presentation of this situation in which the D represents the demand curve, $AFO=S$ represents the average factor outlay or supply curve and the MFO represents the marginal factor outlay or marginal purchase price curve. The monopsonist will pay a price of P_m and purchase the quantity Q_m under this situation.

Figure 2: Monopsony of the Contracting Firm



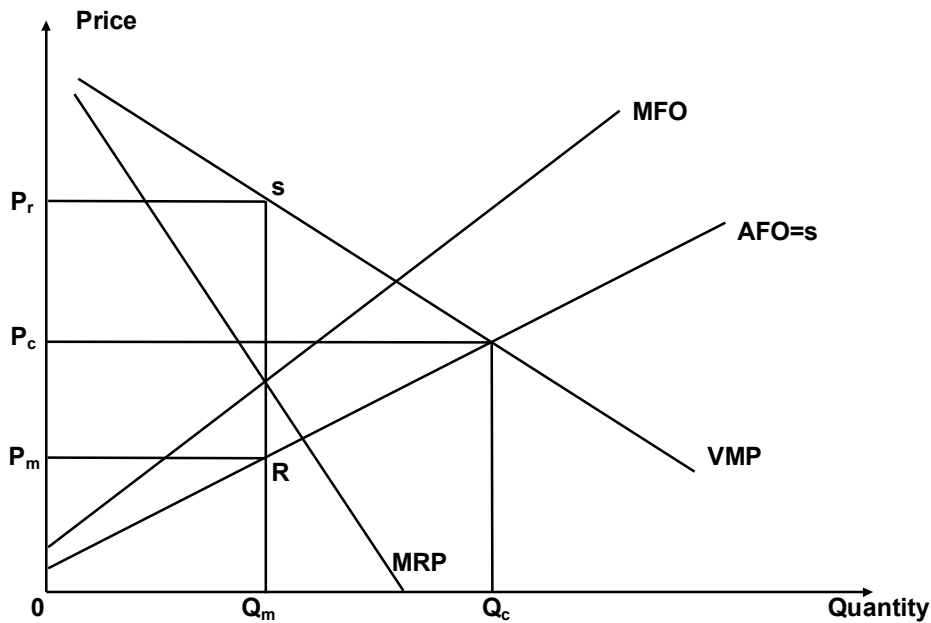
Both this price and the quantity are lower than what would have been under perfectly competitive conditions. The price under perfect competition is represented by P_c and the quantity by Q_c . Therefore, under a monopsony situation farmers are compelled to sell a lower quantity at a lower price than under perfect competition. Thus, the monopsony leads to an imbalance in bargaining power and the distribution of benefits among the parties involved. Under such circumstances, Glover maintains that growers welfare can be increased if effective grower's associations can be organised to bargain the price and quantity with the monopsonist contracting firm.

Etherington (1970) with reference to the Kenya Tea Development Authority (KTDA) drew attention to the market structure within which it operated. He found the KTDA to be an all-powerful autocratic organisation, both monopolist and monopsonist. This means that it is the single buyer of the tealeaves from the producers and also the single seller of tea to the consumers or exporters; (i.e., monopoly in the consumers market and

the monopsony in the producers market). This type of market structure is illustrated graphically in figure 3.

Here, the difference from the earlier graphical presentation in figure 2 lies in the characteristic of the demand curve. Since there is a monopoly in the consumer market, $P = AR > MR$ and therefore VMP (value of the marginal product) is greater than MRP (marginal revenue product). Accordingly, at the profit maximising point, $MRP = MFO$ and the price paid to the producers would be P_m , which is less than the perfectly competitive price, P_c . The producers are worse off, because not only is the price lower than in the competitive situation but the quantities bought are also lower. ($P_c > P_m$; and $Q_c > Q_m$). The prices charged to the consumers are represented by P_r . Hence, under this situation the firm enjoys an abnormal profit equal to the area represented by the rectangular $PrSRP_m$. In this situation the firm has the ability to exploit both producers and consumers. However, it has been argued that producers can gain (or mitigate its effects), if they could form an effective bargaining association of growers.

Figure 3: Monopoly in the Consumers Market and Monopsony in the Products Market



Roy (1972) is of the view that contract farming and economic integration may be related to oligopolistic market structures. He says "at the initiation of economic integration) markets are usually atomistic or monopolistically competitive) with each contracting firm being a small part of the industry in question. As more production becomes controlled at one level (horizontal integration)) vertical integration is made feasible. Subsequently circular integration becomes more extensive until finally a

relatively few firms may dominate the industry" (p.35). The graphical presentation of the oligopsony situation is similar to that of monopsony) which is depicted in figure 2. The producers welfare under oligopsony is affected in the same manner as described under the monopsony situation~ both prices and quantities being lower than those under perfect competition. However, there is an added dimension under the oligopsony market structure which is non existent under monopsony. Oligopsonists may attempt several methods to differentiate their product or service from rivals. Roy, referring to contract broiler growing in the United States, has said that, " each oligopsonist has a contract different in one or more aspects, from its rivals. Thus growers have difficulty in comparing and evaluating contracts from different oligopsonists. Therefore a firm with a low paying contract, does not fear the loss of its growers because growers will likely never be able to successfully compare this contract with others due to the many differentiating clauses and provisions" (p.37). He is also of the view that a contract grower organisation, which could successfully perform these comparative analyses might be helpful in improving returns from a contract. Roy says) "Contract farming and economic integration may reduce farmers bargaining power depending upon the market structures thus created. However, the lack of farmer bargaining power under economic integration is not insoluble" (p.69). According to him, farmers can organise contract bargaining co-operatives to counteract market power otherwise enjoyed by contracting firms. However, if contract farmers through group bargaining should demand excessively high payments, the contracting firms may find it more profitable to grow their own supplies." By the same token, if integrators would lower their payments excessively, contract farmers may decide to integrate vertically through co-operatives"(p.73). Thus, when a contracting firm is faced with a bargaining association of the growers the resultant price and quantity would be between those of oligopsony and perfect competition. This would mean the resultant price would lie between P_c and P_m and the quantity between Q_c and Q_m depicted in figure 3. This situation is however, better in terms of growers welfare than both monopsony and oligopsony situations, but still worse than that under perfect competition.

A theory of bargaining associations developed by Helmberger and Hoos (1965) for dealing with grower-processor markets for fruits and vegetables in California, U.S.A, can be used in analysing contract farming systems as well. The theoretical base for this treatment comes from the bilateral monopoly model, which is concerned with indeterminacy in economics. According to the bilateral monopoly model, the price and quantity is indeterminate under bargaining. Economic theory only enables the analyst to point to the upper and lower limits for the prices; the upper limit being the price that would result if the bargaining association is in a position to act as a monopolist, assuming that the buyers side is perfectly competitive, (P_r in figure 3); and the lower limit being the price that would result if the buyer can act as a monopsonist, assuming the sellers market is competitive, (P_m in figure 3). The exact price and the quantity that may be negotiated through a bargaining association would lie anywhere in between these two extremes depending not only upon conditions of demand and cost with which the economist can deal, but also upon the bargaining skills of both buyers and sellers and other personal characteristics external to the realms of economic analysis



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(Ferguson: 1972). Helmberger and Hoos see that only a small chance exists for a bargaining association to increase the growers price above the perfectly competitive level, (pc in figure 3). They have found that the most crucial factors, which determine the possibility of attaining a higher price than the perfectly competitive level are the price elasticity of demand of the product concerned and the elasticity of supply of non-members producing the same product. They argue that unless demand is price inelastic, there is no possibility that co-operative bargaining would lead to higher prices. But, price inelasticity alone is not enough. If elasticity of non-member supply equals 1.0 for example, the co-operative must supply buyers with more than 50 per cent of the quantity demanded, even if demand is perfectly inelastic. Therefore it could be said that the potential for a bargaining co- operative to increase returns to its members and the size of that gain depends on three basic considerations:

- i) the extent of associations' market control;
- ii) the price elasticities of demand and the non-member supply; and,
- iii) the speed with which long run adjustments takes place.

Helmberger and Hoos argue that any gain that exists would be transitory in nature. This is because the theoretical long run market performance might tend toward the perfectly competitive extreme with no potential for price gain through co- operative bargaining. Considering the two cases where a co-operative bargains with either a monopsonist or with oligopsonists, they conclude that a necessary condition for the existence of price gains in the long run is the presence of monopsony or oligopsony in processor procurement policies. But, it is not a sufficient condition. The strategic elements present in a bargaining environment are very important, because, even if substantial potential price gain exists, the bargaining associations may be unable to secure them for their members if to do so they must bargain with a pure monopsonist or a group of highly collusive oligopsonists. However, if there exists some element of independent market conduct (i.e. in an oligopsonistic situation some competitive elements of market behaviour), bargaining associations may be able to raise price and divorce their level from the quantity purchased in any given season, by refusing to deal with those who are unwilling to make price concessions. As a result, processors may pay a higher price and purchase a large quantity than they otherwise would under conditions of monopsony or oligopsony, thereby making it unnecessary for bargaining association to engage in product dumping or supply limitation of some sort. In response to this higher price a larger quantity is produced and sold to processors so that retail prices must tend downwards in order that the markets are to be cleared. Therefore (they argue) effective co-operative bargaining tends to push market performance towards competitive extreme in the long run.

However, Hardie (1969) has pointed out that, there is a possibility of increasing the returns of both producers and buyers where considerable amount of excess capacity exists in the processing industry. Ladd (1964) has called such a situation "opponent gain" or type I bargaining power, and has said that it is possible to increase the returns



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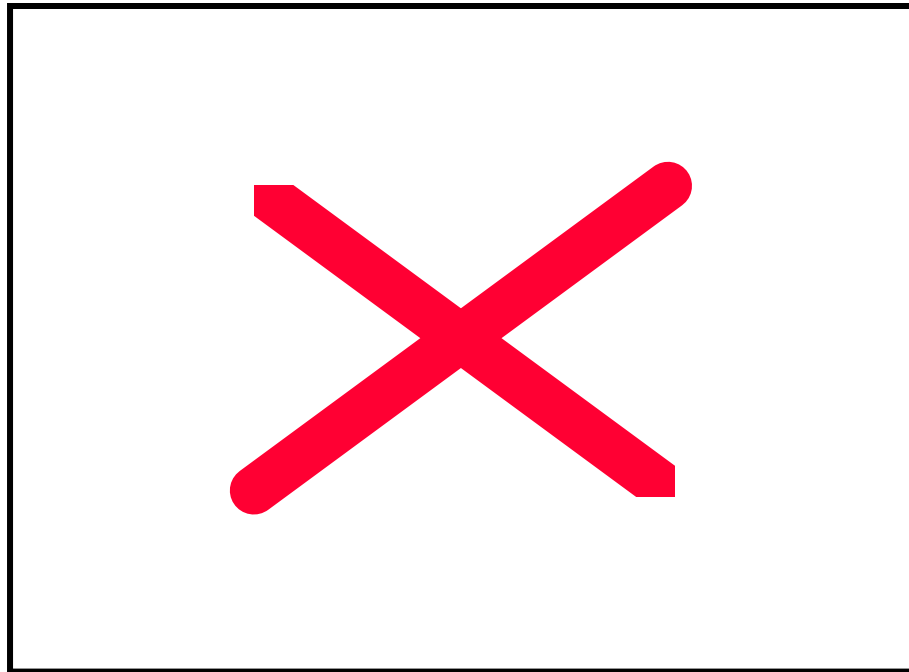
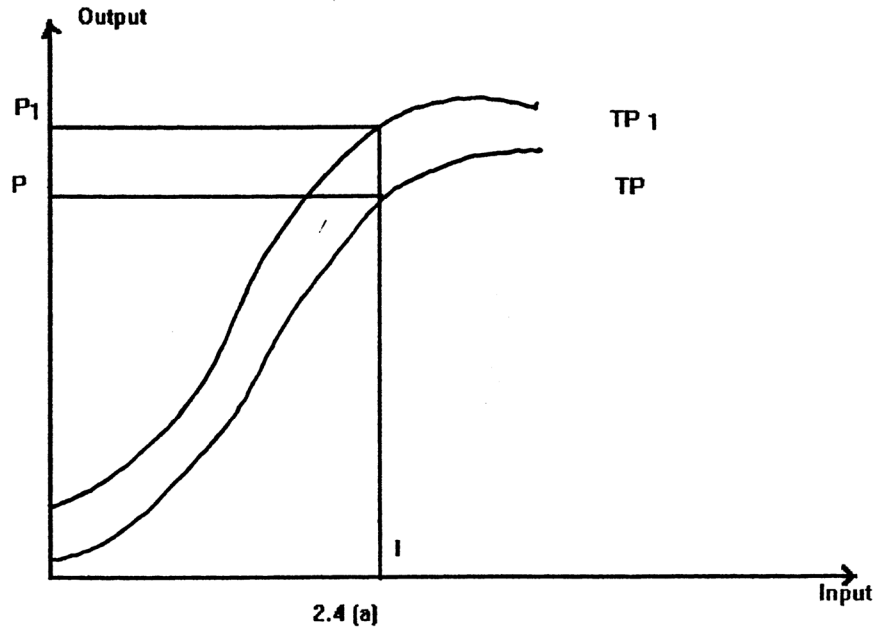
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of both parties in the long run if the buyers facing the bargaining association have a relatively small proportion of the volume transacted in the market.

4.3 The Theory of the Contract Farming

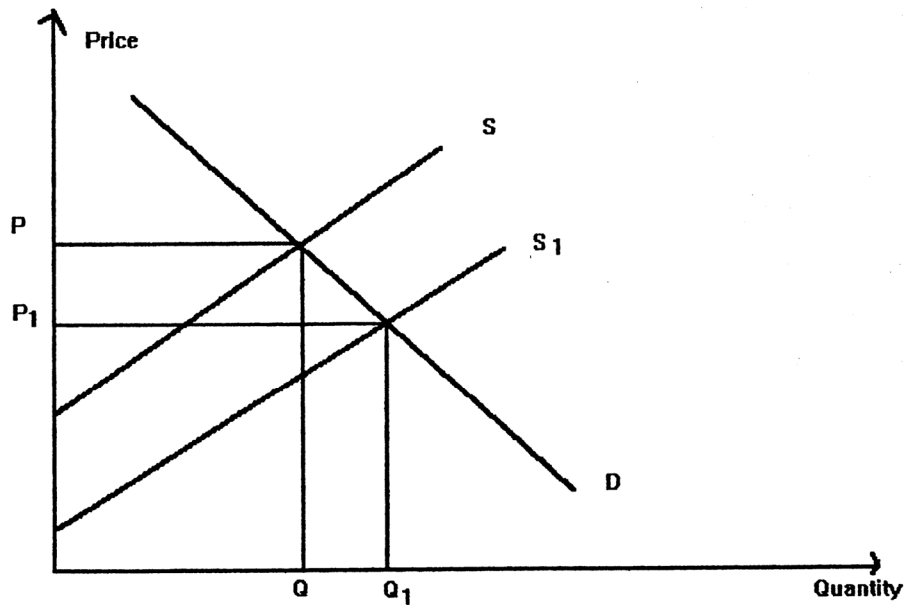
It has been maintained (Roy op.cit.) that contract farming disseminates new farming technology and improves access of the farm firm to credit and material inputs, which facilitates the adoption of new technology. Figure 4 depicts this situation in which the new technology adopted in a farm firm. What is happening to total productivity and average costs when a farmer adopts a new technology is shown in figure 4 (a), and figure 4 (b). In figure 4 (a) this has been shown by shifting the total product curve (TP) from TP to TP1. This means that at any given input level the output resulting from the new technology is greater than that given by the old or traditional technology.

Figure 4: Introduction of New Technology under Contract Farming



In the figure 4 (a) the same input level I gives a total output of p under traditional technology while it is p_1 under new technology. This increase in output leads to the lowering of average and marginal costs of production, which is shown by the downward shift of the AC curve in figure 4 (b). Accordingly the farm firm can either produce a larger volume under the same price or produce the same quantity at a lower price. The rapid infusion of technology has several implications for farmers. Since aggregate supply shifts to the right from S to S_1 due to greater efficiencies in production, as shown in figure 5 while the demand remains unchanged, the farmers are able to produce and sell a greater quantity than was possible under traditional technology, but at a lower price. Since the price comes down, those farmers who are unable or unwilling to adopt the new technology (e.g., non-contract farmers) are gradually squeezed out. In an integrated industry, as one that would emerge through contract farming, non-contract farmers may be at a disadvantage in their access to new technology.

Figure 5: New Technology and the Farming Sector



This can lead to the concentration of production among large-scale growers due to the twin cost advantages they have, one resulting from new technology (downward shift of the AC curve) and the other from economies of scale (Movement along the AC curve). This can be minimised however, if the contract specifies a restricted volume or acreage per individual grower.

Contract farming may reduce farmers' entrepreneurial decision making power as well, depending on the nature of the contract. Some contracts may eliminate most of the



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farmers' decision making power, while others may remove very little. Roy (op.cit. p.60) has said that, "the erosion process of farmer decision making may begin with simple credit extension by a dealer and progress quite steadily until a farmer is a piece worker or hired worker for the integrator". He maintains however, that even if farmers decision making is reduced or eliminated under contract, this does not signify an unprofitable situation for the farmers.

Although the prices are lower than under a perfectly competitive market structure and also the decision making power of the farmers are reduced under contract farming it provides a more co-ordinated and smooth marketing system compared with lesser integrated or non-integrated systems. While contract farming may not provide farmers with higher returns for their contributed resources, they will, over the long run, provide assured market outlets and markets with more stable returns. This enables the farmer to make better long-term production plans with less uncertainty and avoid "cobweb" type situations in which cyclical movements in farm prices and output are traditionally found.

Since contract farming helps in reducing uncertainty in production, theoretically, the contracts can minimise price risks and stabilise output. Roy (ibid. p.41) says that, "it is not by accident that contracts have developed more extensively for perishable crops where price risks are greater than for less perishable products". The contracts allow for the shift of part or all of economic risks to the contracting firm. However when farmers decide to relinquish all or most of their price risks, they also must relinquish the opportunity to profit when farm prices are favourable. There will also be new risks in engaging in contract farming. An example of a new risk is the risk of not having ones contract renewed. If independent production is still possible this risk may not be too serious, otherwise the hazards are great. This stems from the farmers inability to utilise his facilities if another contractor is not willing to contract. Contracting has other advantages as well. It can better adjust supply or production to market demand, because if each farmer and each company adjusted his/its supply precisely to known and committed marketings, then the sum total of supply would match the aggregate demand with no shortages or surplus. A non-integrated system is not likely to adjust supplies to market demand quite as well, because of the tendency to develop production plans based on past prices. This phenomenon results in cobweb type wide swings in production and price, which may cause a waste of resources.

Roy concludes that "contract farming in and of itself neither good nor bad. It is dependent upon the economic circumstances surrounding each individual situation" (ibid. p.9). Also, farmers decision to contract or not is highly individualised. It rests upon many factors including the personal preferences, credit availability, managerial capacity, local market structure, social factors, ability to assume market risks, and most of all alternatives available for land, labour, capital, and management resources. Even a lower paying contract may be the best option in a given situation when compared to a high risk non-contract alternative which has the potential, but not the guarantee, of higher returns.

4.4 Contract Farming and Development Theory

When perusing the literature on contract farming it becomes clear that this subject is inextricably linked with at least three other issues. First, the literature on contract farming is linked to a very large extent with the activities of the transnational agribusiness firms. Although contract farming and outgrower schemes have been used also by local private firms and parastatal organisations in the LDCs, most contract farming schemes do have connections with transnational agribusiness firms. Many of these transnational firms, during the recent past, appear to have favoured contract-farming schemes as opposed to plantations or large-scale agricultural development projects due to various economic and political reasons (Tiffen and Mortimore: 1990, Graham and Floering: 1984, Voll: 1980). Thus, the literature on contract farming is closely associated with those on the impact of transnational agribusiness on the host country economy, and the farming households (Goldsmith: 1985).

Second, most crops selected for contract farming are cash crops as opposed to food crops (Glover: 1990; Minot: 1986). This is because "the crops most easily incorporated into contract farming and outgrower schemes are likely to be those with high and skilled labour requirements and high revenues per hectare. Crops enjoying significant economies of scale in production are less suitable, although innovative management practices can compensate" (Glover: 1990; p.305). Moreover, "it is least common for basic food grains which are not processed" (Minot: 1986 p.69). Furthermore, the majority of the crops grown under contract farming are destined for export. For these reasons, the evaluation studies on contract farming are also linked with the debate on cash crops or export crops vs. food crops (Maxwell: 1988).

Third, the spread of cultivation of cash crops increases the commercialisation of agriculture in the LDCs. Thus, the impact of this process on food consumption and nutrition of the farming households has become another area of concern, particularly by the researchers attached to the International Food Policy Research Institute (IFPRI).

The literature surrounding the contract farming and outgrower schemes can be broadly classified into four main categories. They are the Business School approach (BS) (Goldberg: 1981; Morris:1974); the Food First School (FFS) (Lappe and Collins:1977; George:1980) the Dependency School (Fedder:1977; Arroyo:1978) and others (Glover: 1983; Goldsmith: 1985). The BS line is also supported by the World Bank (World Bank: 1981).

The BS approach stresses that agriculture is an international system; believes that small farmers can gain from becoming involved in it; and sees agribusiness (and through this contract farming) as a means of developing rural areas in LDCs. Writers of this school also point to the contribution cash crops can make to growth, through the exploitation of comparative advantage and the reinvestment of surpluses earned (World Bank:1981; Myint:1984). The FFS on the other hand holds that the internationalisation of



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agriculture hurts small farmers by exposing them to more efficient competitors and by driving them out of traditional food crops. They also point to the additional drawbacks in the realms of income distribution and the environment. It is argued that food production to meet local needs should be given priority and only subsequently should LDCs engage in the international trade to exchange surplus production for other goods and services (Matthews: 1988). The Dependency school's position is well documented. Writers in this school perceive that contract farming as organised by the peripheral state and transnational agribusiness and financed by international lending and aid agencies is spreading swiftly in the LDCs but that this form of capitalist development can only immiserate the rural poor. They also "regard the local state as a tool of international capital and its dependent (comprodoire) bourgeoisie." (Buch-Hansen and Marcussen: 1982 p.9)

Members of the fourth group are pragmatic in their approach and try to isolate contract farming as an institutional mechanism from the debate on agribusiness and cash crops and attempt to evaluate the impact of contract farming on the national economy, firms, and participating farmers and also to examine what factors constrain the replication of contract farming and outgrower schemes (Maxwell and Fernando: 1989; Ellman: 1986).

The advocates of agribusiness also believe that an increasing variety and volume of agricultural production in LDCs will be grown under production contracts in the future not because of political reasons as advanced by the dependency school, but due to the fact that food processing companies, small farmers and host governments each derive major benefits from contract farming (Goldsmith: 1985).

The processors, while wanting to control their raw material supplies are finding primary production by themselves increasingly unattractive, finding that contract farming allows them the possibility of allocating only a limited area to a company estate. This avoids some of the political and economic problems that may crop up in large-scale agricultural projects (Voll: 1980). Smaller nucleus estates avoids removing large numbers of farming families from the land but provides employment in the factory and may therefore defuse the issue of alienation. It also avoids the difficulties in managing a large agricultural labour force, the problems of rising wage rates due to unionisation of labour, and the issue of large overseas land holdings becoming a political liability which is subject to increasing government regulation and potential nationalisation (Goldsmith:op.cit.). While these factors discourage most companies from engaging in primary production, there are other compelling reasons for them to remain integrated to the field level. The principal reason amongst them is to ensure the supply of raw materials of sufficient quantity, and good quality, which are essential to the efficient operation of processing facilities (Austin: 1981).

Contract farming also has some advantages over bulk purchasing of raw materials by the processing firms from the open market. Relying on open market purchases is unlikely to achieve the objective of keeping the raw material inflows at a steady level close to plant capacity. Contracts on the other hand can specify the planting dates (and



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thus indirectly delivery dates) as well as total quantities to be delivered. "The contract reduces much of the uncertainty that would exist if the company simply bought crops on the open market, and gives it some control over the production process (for example, over the variety grown)" (Glover: 1984, p.1145).

Contract farming offers some advantages to the farmers as well. With contracting growers have an assured market for their crops, thus enabling them to forecast their incomes more accurately. They can also experiment with new crops and cultivation techniques, gain access to company's services, (extension advice and machine hire) material inputs (fertilisers, agro-chemicals and seed/planting materials) and obtain easier access to credit. These advantages may enable them to become more specialised and increase productivity (Glover: 1983; Goldsmith: 1985; Roy: 1972).

The host country governments are also benefited by increased agricultural production and employment, higher export earnings (or foreign exchange savings) greater tax revenues, savings in public expenditures on agricultural extension, input supply and marketing (which the company itself will provide) and expansion of the agro- industrial base.

5.0 Controversial Issues

The FFS and the Dependency School are both highly critical of agribusiness and contract farming. The most frequent argument is that these schemes tend to shift both physical and human resources (land and labour) away from subsistence food crop production to cash crop or export crop production. According to them this is happening in a context of severe food shortages and amidst starvation and famine in LDCs, particularly in the countries of Africa (Lappe and Collins: 1977, George: 1980, Dinham and Hines: 1983, Mackintosh: 1989). Thus, they are highly critical of the bilateral and multi-lateral donor agencies who support such schemes financially. The critics also argue that contract farming is simply a method of obtaining cheap labour to increase the profit margins of multinational agribusiness firms. They claim that the crops selected for contract farming are usually highly labour intensive, and therefore, producing them on factory owned plantations is more expensive due to rising labour costs. When these crops are contracted to small-scale farmers, they can be grown cheaply due to the extensive use of self and unpaid family labour. These small-scale farmers, according to the critics, subject themselves to hard work and "self exploitation" of labour in order to obtain cash income (Fedder: 1977, Arroyo: 1978). Another criticism of contract farming is that they transfer both production and marketing risks of a crop to the growers. The growers in addition to facing risks of crop failure due to climatic variability for example, also have to take the greater risks, which result from the heavy expenses incurred on material inputs. Furthermore, they also have to bear marketing risks resulting from low overseas demand, and price fluctuations (Mackintosh: 1989, Kusterer: 1981). According to these critics, contract farming could create excess capacity, over production, and market crisis (Fedder: 1977, Mackintosh: 1989). This would occur if companies tend to contract out more production volume than necessary

and thus create over supply. Since the company is the monopsonist buyer, there are no other buyers for this excess production. The same thing could happen when the supply from producers within the importing country increases (Fedder: 1977, Kusterer: 1981). These critics also contend that the multinational agribusiness firms often tend to contract large growers at the expense of small-scale farmers. Through this process the agribusiness firms help to exacerbate the unequal distribution of income among farmers (Dinham and Hines: 1983, Raffia: 1987). Another contention of these critics is that, through these schemes autonomous farmers have been transformed into "piece workers" on their own land. According to them most important decisions in farming are taken by the company itself, and farmers lose their decision making power in the process. They also claim that these firms abuse monopsony power and violate contract provisions to maintain their large profit margins. Finally, they blame these companies for degrading the environment and they alledge that multinational agribusinesses exploit and plunder the available resources in LDCs (Franke and Chasin: 1980, Fedder: 1977).

All these issues are extremely controversial, and can rarely be resolved in absolutist terms (Maxwell: 1988). They touch on topics as diverse as growth, distribution, food security and the environment; and ranges across levels of analysis from the household, through village and region to the national and international economy. In addition to the different issues and levels of analysis, the plethora of studies ranges across crops, countries and time periods (Maxwell and Fernando: 1989). Neither is the subject free from strong political ideological interpretation (Fedder: 1977; Dinham and HiDes: 1983; Mackintosh: 1989).

Glover (1984) is highly critical of the methodologies used in many of these studies in the latter group. He suggests that, most of the studies of the FFs and the Dependency School lack a rigorous comparative methodology and states that, "In this approach, isolated facts are juxtaposed, then presented as cause and effects and unicausal explanations are offered for diverse and complex phenomena. This weakness stems in part from heavy reliance on secondary, often journalistic sources of information. Among them not only the quality of the studies but the ideological perspective and disciplinary focus of the writers have varied widely" (p.1144).

Goldsmith (1985) commenting on these controversies, has said that, "both bodies of opinion make valid points. Their disagreements stem partly from their use of different criteria to evaluate agribusiness activities in LDCs -pro-agribusiness researchers tend to look at the internal benefits, whereas the anti-agribusiness ones usually focus on external costs. The spokesmen for agribusiness have emphasised the positive features, but the critics have shown that these sorts of projects can have many harmful consequences as well. A more balanced analysis is needed"(pp.1125-6).

Minot (1986) is also critical about the contents of the available literature when he says, "the available theoretical and empirical literature on contract farming in Less Developed Countries is somewhat limited, of varying perspectives, and probably



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unrepresentative. Drawing conclusions from this literature is risky, but some patterns are consistent enough to justify generalisation"(p.68).

6.0 Conclusions

The impact of the Contract Farming (CF) and Outgrower Schemes (OGS) on farmers, contracting firms and host governments has become a controversial issue in the available literature. As this literature comes from various disciplinary backgrounds and political perspectives there are vast differences in the conclusions arrived at by different authors. Even within the discipline of economics it has not been possible to reach a general consensus on the issues at hand; and it is doubtful whether it is possible to reach such a consensus in the near future. In this paper an attempt was made however, to review some of the economic theories that might be of help in analysing the economic impact of contract farming and outgrower schemes in developing countries. These theories, it is hoped might be of help for further research on CF and OG schemes within the realm of economics.

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